

CV – Dr. Arjen Alink

BRIEF PROFILE

- Group leader of an ERC-funded lab in Hamburg (<https://www.knowledge-based-vision.com>)
- Interested in revealing how our knowledge and objectives shape perception
- An expert in neuroimaging methodology and developing advanced multivariate data analyses
- A proponent of interactive problem-based learning

PERSONAL INFORMATION

- Date and place of birth: 24.09.1983, Nijmegen, the Netherlands
- Family status: Married, 3 children (born in 2011, 2013 and 2016)
- Work address: Martinistraße 52, 20251 Hamburg,
email: a.alink@uke.de, phone: 040 7410 27300
- Fluent languages: Dutch, German and English

EDUCATION

- 2006–2011 PhD in Cognitive Neuroscience Supervisors: Prof. Rainer Goebel and Dr. Lars Muckli
University of Maastricht, Faculty of Psychology and Neuroscience, the Netherlands
- 2001-2006 Master in Psychology
University of Maastricht, Faculty of Psychology and Neuroscience, the Netherlands

RESEARCH POSITIONS (month/year)

- 02/23 – (01/28) Principle Investigator of the Knowledge-based Vision Lab
Institute of Systems Neuroscience, University Medical Centre Hamburg-Eppendorf
- 10/22 – 01/23 Principle Investigator (interim position)
Institute of Systems Neuroscience, University Medical Centre Hamburg-Eppendorf
- 09/21 – 09/22 Senior Postdoctoral Scientist
General Psychology Lab at the University of Hamburg
- 06/16 – 08/21 Postdoctoral Scientist
Institute of Systems Neuroscience, University Medical Centre Hamburg-Eppendorf
- 12/10 – 05/16 Postdoctoral Scientist
Medical Research Council, Cognition and Brain Sciences Unit, Cambridge, UK
- 12/05 – 11/10 PhD Student
Max Planck Institute for Brain Research, Frankfurt am Main

AWARDED GRANTS AND FELLOWSHIPS

total: €2,544,347, transferable: €1,878,000

year of award

- 2022 **€1,999,815 [transferable: €1,878,000]** ERC Consolidator Grant
How expectation and attention shape visual information processing in the human brain (ID:101044616)
- 2017 **€171,460** Marie Skłodowska-Curie fellowship
Vision at a second glance - how memories interact with and depend on information processing in the human visual cortex (ID: 753441)
- 2013 **£194,914 (€225,872)** British Academy Postdoctoral Fellowship
The brain, a prediction machine?
(<https://www.thebritishacademy.ac.uk/funding/postdoctoral-fellowships/past-awards/2013/>)

- 2010 **€147,200** Dutch Research Council (NWO) Rubicon Fellowship
Sight and sound combined - brain mechanisms of multisensory integration (ID: 825.10.023)
- ****
I reached the interview stage for the ERC starter grant (2018 call, SH4 panel) and was interviewed twice for the Emmy Noether programme (on 06.09.16 and 17.10.20)

SELECTION OF INVITED TALKS AND CONFERENCE PRESENTATIONS

- Symposium presentation at the upcoming SfN/Neuroscience 2023 (Washington D.C, USA): *Stimulus-evoked EEG response patterns more strongly encode expected than unexpected image components*
- Poster presentation at SfN 2017 (Washington, USA): *Subclinical markers of autism affect low-level visual information processing*
- Invited talk at the Adaptive Brain Lab, Department of Experimental Psychology of the University of Cambridge 2015 (Cambridge, UK): *Vision at a second glance*
- Invited talk at the CBU Methods Day Meeting, at the MRC Cognition and Brain Sciences Unit 2015 (Cambridge, UK): *The potential of MEG pattern analysis*
- Poster presentation at SfN 2015 (Chicago, USA): *Mind the drift - Improving sensitivity to fMRI pattern information by accounting for temporal pattern drift*
- Invited talk for the Cognitive Neuroscience Colloquium at the Institute of Systems Neuroscience 2014 (Hamburg): *The brain, a prediction machine? Neuroimaging insights and perspectives*
- Poster presentation at the Organization of Human Brain Mapping (OHBM) 2012 (Beijing, China): *Attention enhances category information of fMRI response patterns*
- Invited talk for the Wednesday Lunch Time Seminar Series, MRC Cognition and Brain Sciences Unit 2011 (Cambridge, UK): *Minding object category increases category distinctness of response patterns in ventral temporal cortex*
- Symposium presentation at SfN 2007 (San Diego, USA): *When apparent motion and real stimuli meet in primary visual cortex*
- Symposium presentation at Psychologie und Gehirn 2007 (Dortmund), *Capture of auditory motion by vision is represented by an activation shift from auditory to visual motion cortex*

TEACHING

Own Curriculum

- Project Seminar: Learning and Implementing Psychophysics with PsychoPy, University of Hamburg (a two-part seminar that covered both the winter semester of 2021 and the summer semester of 2022)
 - Average feedback grade: 6.6 on a 1 to 7 scale, with 7 being the highest grade

Other's Curriculum

- Follow-up Seminar: General Psychology I, University of Hamburg (summer semester 2022)
 - Average feedback grade: 6.0/7.0 (see above)
- Four 90-minute lectures on neuroimaging methods for the lecture series 'Introduction to Cognitive Neuroscience', University of Hamburg (2016- 2020)
 - These lectures were not graded individually as they were part of a larger seminar series

SUPERVISION AND CO-SUPERVISION

- **Supervision of three PhD students that have started their PhD in September 2023**
 - Ivana Tanasic, Antoniya Boyanova, Nahid Hasan
- **Second corrector on:**
 - Bachelor thesis of Elena Sofie Kürten: *Efficient strategy adaptation in within-domain decisions* (evaluated in 09/2023)
 - Bachelor thesis of Fabiola Fröhle: *Der Einfluss von Zeitdruck auf Aspekte sozialer Entscheidungen* (evaluated in 07/22)
- **Co-supervised graduate students (all co-authors on at least one publication):**
 - Alexandra Krugliak (2012) – now a postdoc at the University of Cambridge
 - Elena M. Galeano-Keiner (2010) – now a postdoc at Leibniz Institute for Research and Information in Education in Frankfurt am Main
 - Felix Euler (2009) – now a clinical psychologist at the University Clinic of Zürich
 - Caspar Schwiedrzik (2007) – now a research group leader at the University of Göttingen

INTERNATIONAL SCIENTIFIC PARTNERS

- Prof. Richard Henson, University of Cambridge, UK
- Prof. Bernhard Staresina, University of Oxford, UK
- Prof. Nikolaus Kriegeskorte, Columbia University, New York, US
- Prof. Lars Muckl, University of Glasgow, UK
- Prof. Floris de Lange, The Donders Institute, The Netherlands
- Adj. Prof. Ian Charest, University of Montreal, Canada
- Ass. Prof. Jaan Aru, University of Tartu, Estonia

SCIENTIFIC PARTNERS IN GERMANY

- Prof. Christian Büchel (University Medical Center Hamburg-Eppendorf)
- Prof. Lars Schwabe (University of Hamburg)
- Prof. Sebastian Gluth (University of Hamburg)
- Prof. Christoph Korn (University of Heidelberg)
- Dr. Helen Blank (University Medical Center Hamburg-Eppendorf)
- Dr. Caspar Schwiedrzik (University of Göttingen)

SCIENTIFIC NETWORK

- I am part of the DFG Research network for the Interdisciplinary Study of Predictive Processing in Memory and Perception (PPiMP,) consisting of: Dr Helen Blank (Hamburg), Dr. Alejandro Tabas (Dresden), Dr. Falk Eipert (Leipzig), Jun.-Prof. Benjamin Gagl (Köln), Dr. Florian Hintz (Nijmegen, the Netherlands), Dr. Franziska Knolle (Munich), Lucy MacGregor (Cambridge, UK), Dr. Anna Marzecova (Leipzig), Prof. Milena Rabovsky (Potsdam), Dr. Caspar Schwiedrzik (Göttingen), Prof. Moritz Köster (Regensburg), Dr. Peter Kok (London, UK), Dr. Daniel Yon (London, UK), Dr Andrea Greve (Cambridge, UK), Prof. Janine Bayer (Hamburg)

SCIENTIFIC REVIEWING

- **Journals:** eLife, Cerebral Cortex, Journal of Neuroscience, Human Brain Mapping, Nature Scientific Reports, Social Cognitive and Affective Neuroscience, Journal of Cognitive Neuroscience, PLoS ONE, Journal of Neurophysiology and Frontiers in Psychology.
- **Funding bodies:** Israel Science Foundation (ISF) – Individual Research Grant (775/16) and Joint NSFC-ISF Research Grant (2497/18)

INSTITUTIONAL RESPONSIBILITIES

- Faculty member of the Hamburg Brain School (graduate school)
- Current member of the board of group leaders responsible for organizational decision-making at the Institute of Systems Neuroscience in Hamburg
- Member of the Equality and Diversity Committee (2014-2016) – realizing fairness of opportunity for all staff of the MRC Cognition and Brain Sciences Unit. Our efforts were rewarded with an Athena SWAN bronze award in April 2015.

PRESS COVERAGE

- Spectrum news: Finding strengths in Autism (12/05/21)
- New York Times: *Memories Weaken Without Reinforcement, Study Finds* (16/03/15)
- Forbes: *Why Remembering Makes Us Forget* (08/04/15)
- New Scientist: *How your brain remembers the future* (31/03/10)

PUBLICATION AND SCIENTIFIC IMPACT SUMMARY

I have published 32 peer-reviewed publications in international scientific journals as a first, senior or middle author. My papers have been published in several high-impact journals (1x Nature Neuroscience, 4x Nature Communications, 1x PNAS, 1x eLife and 1x Progress in Neurobiology). I have been cited 2711 times in total and my h-index is 20 according to data from Google Scholar on 19.09.23.

TEN MOST RELEVANT PEER-REVIEWED PUBLICATIONS

1. **Alink, A.** & Blank, H. Can expectation suppression be explained by reduced attention to predictable stimuli? *NeuroImage* **231**, 117824 (2021).
2. **Alink, A.**, Abdulrahman, H. & Henson, R. N. Forward models demonstrate that repetition suppression is best modelled by local neural scaling. *Nature communications* **9**, 1–10 (2018).
3. Wimber, M., **Alink, A.**, Charest, I., Kriegeskorte, N. & Anderson, M. C. Retrieval induces adaptive forgetting of competing memories via cortical pattern suppression. *Nature neuroscience* **18**, 582–589 (2015).
4. Staresina, B. P., **Alink, A.**, Kriegeskorte, N. & Henson, R. N. Awake reactivation predicts memory in humans. *Proceedings of the National Academy of Sciences* **110**, 21159–21164 (2013).
5. Carlson, T., Tovar, D. A., **Alink, A.** & Kriegeskorte, N. Representational dynamics of object vision: the first 1000 ms. *Journal of vision* **13**, 1–1 (2013).
6. **Alink, A.**, Krugliak, A., Walther, A. & Kriegeskorte, N. fMRI orientation decoding in V1 does not require global maps or globally coherent orientation stimuli. *Frontiers in psychology* **4**, 493 (2013).
7. Staresina, B. P., Henson, R. N., Kriegeskorte, N. & **Alink, A.** Episodic reinstatement in the medial temporal lobe. *Journal of Neuroscience* **32**, 18150–18156 (2012).
8. **Alink, A.**, Euler, F., Kriegeskorte, N., Singer, W. & Kohler, A. Auditory motion direction encoding in auditory cortex and high-level visual cortex. *Human Brain Mapping* (2011).
9. **Alink, A.**, Schwiedrzik, C. M., Kohler, A., Singer, W. & Muckli, L. Stimulus predictability reduces responses in primary visual cortex. *Journal of Neuroscience* **30**, 2960–2966 (2010).
10. **Alink, A.**, Singer, W. & Muckli, L. Capture of auditory motion by vision is represented by an activation shift from auditory to visual motion cortex. *The Journal of Neuroscience* **28**, 2690–2697 (2008).

REMAINING PEER-REVIEWED PUBLICATIONS

11. Krenz, V., Alink, A., Sommer, T., Rooszendaal, B., & Schwabe, L. Time-dependent memory transformation in hippocampus and neocortex is semantic in nature. ***Nature Communications*** [accepted] (2023)
12. Grob, A.-M., Milivojevic, B., **Alink, A.**, Doeller, C. F. & Schwabe, L. Stress disrupts insight-driven mnemonic reconfiguration in the medial temporal lobe. *NeuroImage* **265**, 119804 (2023).
13. Grob, A.-M., Milivojevic, B., **Alink, A.**, Doeller, C. F. & Schwabe, L. Imagining is not seeing: lower insight-driven memory reconfiguration when imagining the link between separate events. *Cerebral Cortex* **33**, 7409–7427 (2023).
14. Blank, H., **Alink, A.** & Büchel, C. Multivariate functional neuroimaging analyses reveal that strength-dependent face expectations are represented in higher-level face-identity areas. *Communications Biology* **6**, 135 (2023).
15. Sommer, T., Hennies, N., Lewis, P. A. & **Alink, A.** The assimilation of novel information into schemata and its efficient consolidation. *Journal of Neuroscience* **42**, 5916–5929 (2022).
16. Krenz, V., Sommer, T., **Alink, A.**, Rooszendaal, B. & Schwabe, L. Noradrenergic arousal after encoding reverses the course of systems consolidation in humans. ***Nature Communications*** **12**, 6054 (2021).
17. Chai, Y. Liu, T. T., Marrett, S., Li, L., Khojandi, A., Handwerker, D. A., **Alink, A.**, Muckli, L. & Bandettini, P. A. Topographical and laminar distribution of audiovisual processing within human planum temporale. ***Progress in neurobiology*** **205**, 102121 (2021).
18. Tiedemann, L. J., **Alink, A.**, Beck, J., Büchel, C. & Brassens, S. Valence encoding signals in the human amygdala and the willingness to eat. *Journal of Neuroscience* **40**, 5264–5272 (2020).
19. Nili, H., Walther, A., **Alink, A.** & Kriegeskorte, N. Inferring exemplar discriminability in brain representations. *Plos one* **15**, e0232551 (2020).
20. **Alink, A.** & Charest, I. Clinically relevant autistic traits predict greater reliance on detail for image recognition. *Scientific Reports* **10**, 14239 (2020).
21. **Alink, A.**, Abdulrahman, H. & Henson, R. Reply to ‘Forward models of repetition suppression depend critically on assumptions of noise and granularity’. ***Nature communications*** **11**, 4735 (2020).
22. Kampermann, L., Wilming, N., **Alink, A.**, Büchel, C. & Onat, S. Fixation-pattern similarity analysis reveals adaptive changes in face-viewing strategies following aversive learning. ***Elife*** **8**, e44111 (2019).
23. Huang, P., Carlin, J. D., **Alink, A.**, Kriegeskorte, N., Henson, R. N. & Correia, M. M. Prospective motion correction improves the sensitivity of fMRI pattern decoding. *Human Brain Mapping* **39**, 4018–4031 (2018).
24. **Alink, A.**, Walther, A., Krugliak, A. & Kriegeskorte, N. Local opposite orientation preferences in V1: fMRI sensitivity to fine-grained pattern information. *Scientific reports* **7**, 7128 (2017).
25. Walther, A., Nili, H., Ejaz, N., **Alink, A.**, Kriegeskorte, N. & Diedrichsen, J. Reliability of dissimilarity measures for multi-voxel pattern analysis. *Neuroimage* **137**, 188–200 (2016).
26. Melloni, L., van Leeuwen, S., **Alink, A.** & Müller, N. G. Interaction between bottom-up saliency and top-down control: how saliency maps are created in the human brain. *Cerebral cortex* **22**, 2943–2952 (2012).
27. **Alink, A. et al.** Auditory motion capturing ambiguous visual motion. *Frontiers in psychology* **2**, 391 (2012).
28. Hein, G., **Alink, A.**, Kleinschmidt, A. & Müller, N. G. The attentional blink modulates activity in the early visual cortex. *Journal of cognitive neuroscience* **21**, 197–206 (2009).
29. Wibrals, M., Muckli, L., Melnikovic, K., Scheller, B., **Alink, A.**, Singer, W. & Munk, M.H. Time-dependent effects of hyperoxia on the BOLD fMRI signal in primate visual cortex and LGN. *Neuroimage* **35**, 1044–1063 (2007).
30. Schwiedrzik, C. M., **Alink, A.**, Kohler, A., Singer, W. & Muckli, L. A spatio-temporal interaction on the apparent motion trace. *Vision research* **47**, 3424–3433 (2007).

31. Hein, G., **Alink, A.**, Kleinschmidt, A. & Müller, N. G. Competing neural responses for auditory and visual decisions. *PloS one* **2**, e320 (2007).
32. Bles, M., **Alink, A.** & Jansma, B. M. Neural aspects of cohort-size reduction during visual gating. *Brain Research* **1150**, 143–154 (2007).